

Translation of the pertinent portions of an International Preliminary Examination Report, mailed 10/07/2004

2. This report comprises a total of 7 pages, including the cover page. Attachments have also be provided.

3. This report contains information regarding the following items:

- I Basis of the Report
- IV Lack of Unity of the Invention
- V Reasoned Determination under Rule 66.2 a)ii)

I Basis of the Report

1. Regarding the contents of the International Application Specification, pages

3 to 10	published version
1, 1a, 2	received 08/13/04 with letter of 08/10/04

Claims, nos.

6-12, 20-25	published version
1-5, 13-19	received 08/13/04 with letter of 08/10/04

Drawings, sheets

1/1	published version
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IV Lack of Unity of the Invention

1. Upon a request to limit the claims or paying additional fees, Applicant has

X paid additional fees

4. Therefore an examination of all portions of the international application has been performed for preparing this report.

V Reasoned Determination under Article 35(2)

1. Determination

Novelty

Yes: Claims 1 to 25
No: Claims

Inventive Activities

Yes: Claims 1 to 25

No: Claims

Commercial Applicability

Yes: Claims 1 to 25

No: Claims

2. References and Explanations

see attached sheet

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

ATTACHED SHEET

Re.: Item IV**Lack of Unity of the Invention**

1. This Office has determined that the international application contains several inventions which are not connected by a single inventive idea (Rule 13.1 PCT):

I: Claims 1 to 3 and 13 to 25:

Forme cylinder without a support element

II: Claims 4 to 12

Adjustable contact pressure as a function of the printing forme.

2. The reasons for this are the following:

A device with support elements at a counter-pressure/transfer cylinder pair and an associated forme cylinder without a support element in accordance with the characteristic of the first invention relevant to the invention in accordance with claim 1 does not necessarily contain an adaptability of the contact pressure as a function of properties of printing formes in accordance with the characteristic, relevant to the invention, of the second invention in accordance with claim 4, and vice versa. For example, an arrangement in accordance with claim 1 could also contain a **water-conducting** printing forme, while an arrangement in accordance with claim 4 could also include a forme cylinder with a support element.

3. Contrary to the requirements of Rule 13.1 PCT there is no connection in the form of a technical interrelationship here between the two inventions which would be expressed in both independent claims 1 and 4 by identical or corresponding special technical characteristics.

Re.: Item V

Reasoned Determination under Rule 66.2(a)(ii)

1. First invention according to claims 1 to 3 and 13 to 25:

1.1 Claim 1:

1.1.1 Prior Art:

Document WO 00/41887, which is mentioned in the specification and is considered to be the closest prior art, discloses a device with all features in the preamble of independent claim 1.

1.1.2 Object:

To make the setting of a contact pressure between a forme cylinder and a transfer cylinder cooperating with the forme cylinder of a printing group easier while maintaining the mechanical stability required between the transfer cylinder and its counter-pressure cylinder, so that the forme cylinder can be covered with at least one printing forme of reduced mechanical sturdiness and reduced temperature resistance in comparison with conventional printing formes.

1.1.3 Attainment

The specific combination of all characteristics in claim 1, in particular the adjustability of the shaft distance between the forme cylinder and the transfer cylinder, wherein in accordance with the characterizing portion of claim 1 no support elements exist between the two, is neither described nor suggested in the prior art, so that inventive activities exist.

1.2 Claims 2, 3 and 13 to 25:

Independent claims 2, 3 and 13 to 25 define advantageous embodiments of the device in accordance with claim 1 and therefore also contain the novelty and inventive activities within the meaning of Article 33 PC in respect to the known prior art.

2. Second Invention in accordance with claims 4 to 12:

2.1 Claim 4:

2.1.1 Prior Art

Document D3 (= EP 0 652 104), which is considered to be the closest prior art, discloses a device with all the features in the preamble of independent claim 4.

2.1.2 Object

To make available a device in a printing group of a rotary printing press having a forme cylinder, a transfer cylinder and a counter-pressure cylinder. .

2.1.3 Attainment

The specific combination of all characteristics of claim 4, primarily the adaptability of the contact pressure as a function of the property of the waterless printing forme in accordance with the characterizing portion of claim 4 is neither described nor suggested in the prior art, so that inventive activities within the meaning of Article 33(3) PCT exist.

2.2. Claims 5 to 12:

Claims 5 to 12 define advantageous embodiments of the device in accordance with claim 4 and therefore also show novelty and inventive activities within the meaning of Article 33 PCT in respect to the known prior art.

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Specification

Devices for Supporting and Adjusting a Form Cylinder in a Printing Group of a Rotary Printing Press

The invention relates to devices in a printing group of a rotary printing press, having a forme cylinder, a transfer cylinder and a counter-pressure cylinder, in accordance with the preambles of claims 1 or 4.

A device in a printing group of a rotary printing press, having a forme cylinder, a transfer cylinder and a counter-pressure cylinder is known from WO 00/41887 A1, wherein the transfer cylinder and the counter-pressure cylinder have cooperating support elements. For compensating unwinding differences between the cylinders with the support elements, and/or for preventing unacceptable wear of the support elements, it has been optionally provided that a normal force, i.e. a contact force, between the support elements can be adjusted and a shaft distance between the transfer cylinder and the counter-pressure cylinder can be changed, wherein one of the two cylinders with support elements is seated in an eccentric bushing.

Cylinders of a rotary printing press having so-called bearer rings are known from DE 29 26 570 C2 and DE 196 01 243 A1, wherein the bearer rings of adjoining cylinders are supported on each other. Bearer rings are support elements designed as barrel rings arranged on the journals of cylinders and supporting the two ends of the cylinder in order to reduce undesired cylinder vibrations and in this way

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to make possible clean printing in spite of groove beat,
wherein the bearer rings are of such dimensions that the
bearer rings arranged on cooperating adjoining cylinders roll
off on each other. Thus a defined shaft distance between two

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printing group cylinders of a rotary printing group is also achieved by means of a bearer ring arrangement. Because of their support of the cylinders, which exists in addition to the seating of the cylinders, the bearer rings cause dampening of cylinder vibrations excited in the course of the rotation of the cylinders by grooves, which have necessarily been cut into the cylinders for holding dressings.

As can be seen from DE 28 02 153 A1, the bearer rings are pushed together under considerable pressure in order to prevent the bearer rings, which run off on each other, from lifting or sliding off during the printing process.

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An arrangement for setting the contact pressure between cylinders of a rotary printing press is known from DD-PS 113 187, wherein the arrangement for plate cylinder adjustment is constructed analogously to that for printing cylinder adjustment.

Document DE 41 42 791 A1 relates to a device for setting the printing pressure, as well as the print-on and print-off setting of printing presses, which can be selectively operated with bearer ring or without bearer ring contact, wherein the device makes possible a common, synchronous adjustment of several cylinders in respect to each other in a single adjustment process while printing with the bearer rings in contact, as well as with the bearer rings out of contact. In particular, with a change of the printing pressure between the rubber blanket and printing cylinders, the plate cylinder is moved to follow the rubber blanket cylinder in such a way that, independently of the printing gap between the rubber blanket and the printing cylinders, the shaft distance between the plate cylinder and the rubber blanket cylinder always remains the same.

The object of the invention is based on providing a device with a forme cylinder, a transfer cylinder and a counter-pressure cylinder in a printing group of a rotary printing press.

In accordance with the invention, this object is attained by means of the characterizing portion of claims 1 or 4.

The advantages to be gained by the invention reside in

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particular in that, in the course of setting and adjustment, the contact pressure required between the forme cylinder and the transfer cylinder, support elements between these cylinders, which correspond with each other and limit the adjusting path, need not be taken into consideration. Since support elements customary in printing groups, for example in the form of bearer rings, are mostly put into contact under prestress, a considerably reduced force is required for setting and adjustment if they are omitted at the forme

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Claims

1. A device in a printing group of a rotary printing press, having a forme cylinder (21), a transfer cylinder (02) and a counter-pressure cylinder (01), wherein the transfer cylinder (02) and the counter-pressure cylinder (01) have cooperating support elements (06, 07), characterized in that a support element (06, 07) cooperating with the transfer cylinder (02) is not provided at the forme cylinder (21), wherein a shaft distance (a2) between the forme cylinder (21) and the transfer cylinder (02) can be adjusted for setting a contact pressure between the forme cylinder (21) and the transfer cylinder (02).

2. The device in accordance with claim 1, characterized in that the shaft distance (a2) of the forme cylinder (21) in respect to the transfer cylinder (02) can be set.

3. The device in accordance with claim 1, characterized in that the shaft distance (a2) can be adjusted, even during the running printing process.

4. A device in a printing group of a rotary printing press, having a forme cylinder (21), a transfer cylinder (02) and a counter-pressure cylinder (01), wherein the forme cylinder (21) has a waterless printing forme (26 to 29),

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characterized in that the contact pressure between the forme cylinder (21) and the transfer cylinder (02) can be matched to a property of the waterless printing forme (26 to 29).

5. The device in accordance with claim 4, characterized in that the property is the pressure stressing of the printing forme (26 to 29).

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13. The device in accordance with claim 1 or 11, characterized in that the adjustability of the shaft distance (a2) consists in the shaft distance (a2) having different values at different contact pressures.

14. The device in accordance with one of claims 1 or 4, characterized in that the forme cylinder (21) has at least one printing forme (26 to 29) coated with silicon.

15. The device in accordance with one of claims 1 or 4, characterized in that the forme cylinder (21) has at least one waterless printing forme (26 to 29).

16. The device in accordance with one of claims 1 or 4, characterized in that the printing forme (26 to 29) is a printing plate which can be applied to the surface area (23) of the forme cylinder (21).

17. The device in accordance with one of claims 2 or 4, characterized in that, for the adjustment of the forme cylinder (21) against the transfer cylinder (02), a rotary shaft (22) of the forme cylinder (21) is in operative contact with at least one eccentric bearing (18, 19), a lever arrangement or a linear drive mechanism.

18. The device in accordance with claim 17, characterized in that the eccentric bearing (18, 19) is an

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eccentric bushing (18, 19).

19. The device in accordance with one of claims 1 or 12, characterized in that the support element (07) of the transfer cylinder (02) and the support element (06) of the counter-pressure cylinder (01) are arranged so that they roll off on each other.